

Katrina(Yuqiao) Hu

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Education

Carnegie Mellon University

Pittsburgh, PA

B.S. IN COMPUTER SCIENCE | DEAN'S LIST 2020-2023

May 2024

- Parallel Programming, Monte Carlo Algorithms, Applied Machine Learning, Probability for Computer Scientists, Distributed Systems(TA), Computer Systems, Cloud Computing, Data Structures and Algorithms, Algorithm Design and Analysis, Category Theory, Functional Programming

Experience

Rubrik, Inc

Palo Alto, CA

SOFTWARE ENGINEER INTERN

Jun 2023 - Aug 2023

- Architected and executed end-to-end Cross-Origin Resource Sharing (CORS) security mechanism on Rubrik Security Cloud.
- Designed MySQL database schema and wrote GraphQL-based API services used by hundreds of customers.
- Migrated snapshots from file system to datastore, implemented unit tests (100% coverage) and realized full CI/CD deployment cycle with Jenkins.

Sustainable LLC

Pittsburgh, PA

BACKEND DEVELOPER INTERN

May 2022 - Aug 2022

- Applied async/await paradigm alongside Promises to interface with Firebase collections, ensuring attainment of eventual data consistency.
- Performed Object-Oriented Design for instantiation of UI components, facilitating customization of assessment models for varied businesses.

Morningstone Technology Co., Ltd.

Beijing, China

MACHINE LEARNING ENGINEER INTERN

Jun 2021 - Sep 2021

- Preprocessed 10-year steel dataset, including data normalization, distribution and correlation analysis, and feature engineering.
- Engineered prediction model based on LSTM and Random Forest for futures market, yielding a commendable average accuracy of 65%.
- Built machine learning pipeline on company's web application using Django, enhancing decision-making capabilities for stakeholders.

Jin Ding Hua Nuo Technology Co., Ltd.

Beijing, China

FOREIGN EXCHANGE TRADER INTERN

Jan 2021 - Mar 2021

- Monitored and managed live trades in the foreign exchange market using MetaTrader 4 with various technical indicators.
- Collaborated with senior traders to devise and implement arbitrage, trend following, and breakout trading strategies.
- Executed strategic stop-loss orders and navigated market volatility, making a \$2,400 profit within a compact 3-day trading window.

Project

Poker Solver

Pittsburgh, PA

CO-DEVELOPER

Oct 2023 - Present

- Implementing a parallel poker solver using Counterfactual Regret Minimization (CFR) algorithm.

Parallel Programming Projects

Pittsburgh, PA

DEVELOPER

Aug 2023 - Present

- Utilized CUDA to implement SAXPY function and computed complex matrix multiplications, achieving order-of-magnitude speedup.
- Used OpenMP to parallelize Quad-Tree simulation for tracking dynamic particle movements, reaching average 7.5x speedup for 250000 particles.

UChicago Trading Competition

Chicago, IL

TEAM LEADER

Feb 2022 - Apr 2022

- Led a team of 4 to make markets on lumber futures market, employing quantitative analysis and statistical modeling to assess fair value.
- Optimized trading volume dynamically in response to market conditions, enhancing profitability and bolstering market liquidity.
- Implemented Black-Scholes model with Monte Carlo simulations to trade options on 10 simulations of an underlying.
- Developed portfolio allocation algorithm based on Risk Parity Allocation and Black-Litterman, ranking Top 15 among 50+ teams.

Skills

Programming Python, Java, C, C++, Go, Scala, SQL, Typescript, Javascript, HTML, CSS, C#, Standard ML

Tools Numpy, Pandas, scikit-learn, PyTorch, Django, AWS, Azure, GCP, Docker, Kubernetes, MySQL, Neo4j, MongoDB, Jenkins, Jira, Angular